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24. (new) The method of claim 23, wherein the alanyl residue is cleaved to yield a polypeptide having a native amino acid sequence.
25. (new) The method of claim 24, wherein the polypeptide is expressed in an expression system selected from the group consisting of a mammalian, a bacterial, and an insect expression system.
26. (new) The method of claim 22, wherein the polypeptide is a human polypeptide.
27. (new) The method of claim 25, wherein the polypeptide is a human polypeptide.
28. (new) The method of claim 24, wherein the polypeptide is selected from the group consisting of human growth hormone (HGH), bovine somatotropin (bST), porcine somatotropin, (pST), and human tissue factor pathway inhibitor (TFPI).
29. (new) The method of claim 24, wherein the contacting is carried out at a pH from about pH 7 to about pH 11.
30. (new) The method of claim 22, wherein the aminopeptidase is immobilized on a solid support selected from the group consisting of chromatography resin, chromatography surface, or chromatography gel.
31. (new) The method of claim 22, wherein the polypeptide that is contacted with the aminopeptidase is recirculated such that the polypeptide is contacted with the aminopeptidase at least one additional time.
32. (new) The method of claim 24, wherein the alanyl group is cleaved from at least 48% of the protein molecules contacted with the aminopeptidase.

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33. (new) The method of claim 31, wherein the contacting occurs at a temperature from about 20 °C to about 40 °C.
34. (new) The method of claim 22, wherein a  $\text{Zn}^{2+}$  native catalytic cofactor of the aminopeptidase is replaced with a cation selected from the group consisting of  $\text{Cu}^{2+}$  and  $\text{Ni}^{2+}$ .
35. A method for removing an N-terminal alanyl residue from a polypeptide, the method comprising expressing a polypeptide having an N-terminal alanyl residue and contacting the expressed polypeptide with immobilized *Aeromonas proteolytica* aminopeptidase to cleave the N-terminal alanyl residue from the polypeptide.
36. (new) The method of claim 35, wherein the alanyl residue is non-native to the polypeptide.
37. (new) The method of claim 36, wherein the alanyl residue is cleaved to yield a polypeptide having a native amino acid sequence.
38. (new) The method of claim 37, wherein the polypeptide is expressed in an expression system selected from the group consisting of a mammalian, a bacterial, and an insect expression system.
39. (new) The method of claim 35, wherein the polypeptide is a human polypeptide.
40. (new) The method of claim 38, wherein the polypeptide is a human polypeptide.
41. (new) The method of claim 37, wherein the polypeptide is selected from the group consisting of human growth hormone (HGH), bovine somatotropin (bST), porcine somatotropin, (pST), and human tissue factor pathway inhibitor (TFPI).

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42. (new) The method of claim 37, wherein the contacting is carried out at a pH from about pH 7 to about pH 11.

43. (new) The method of claim 35, wherein the aminopeptidase is immobilized on a solid support selected from the group consisting of chromatography resin, chromatography surface, or chromatography gel.

44. (new) The method of claim 35, wherein the polypeptide that is contacted with the aminopeptidase is recirculated such that the polypeptide is contacted with the aminopeptidase at least one additional time.

45. (new) The method of claim 37, wherein the alanyl group is cleaved from at least 48% of the protein molecules contacted with the aminopeptidase.

46. (new) The method of claim 44, wherein the contacting occurs at a temperature from about 20 °C to about 40 °C.

47. (new) The method of claim 35, wherein a  $\text{Zn}^{2+}$  native catalytic cofactor of the aminopeptidase is replaced with a cation selected from the group consisting of  $\text{Cu}^{2+}$  and  $\text{Ni}^{2+}$ .

48. (new) A method for removing an N-terminal alanyl residue from a recombinantly expressed polypeptide having an N-terminal alanyl residue, the method comprising contacting the expressed polypeptide with immobilized *Aeromonas proteolytica* aminopeptidase to cleave the N-terminal alanyl residue from the polypeptide.

49. (new) The method of claim 48, wherein the alanyl residue is non-native to the polypeptide.

50. (new) The method of claim 49, wherein the alanyl residue is cleaved to yield a polypeptide having a native amino acid sequence.
51. (new) The method of claim 50, wherein the polypeptide is expressed in an expression system selected from the group consisting of a mammalian, a bacterial, and an insect expression system.
52. (new) The method of claim 48, wherein the polypeptide is a human polypeptide.
53. (new) The method of claim 51, wherein the polypeptide is a human polypeptide.
54. (new) The method of claim 50, wherein the polypeptide is selected from the group consisting of human growth hormone (HGH), bovine somatotropin (bST), porcine somatotropin, (pST), and human tissue factor pathway inhibitor (TFPI).
55. (new) The method of claim 50, wherein the contacting is carried out at a pH from about pH 7 to about pH 11.
56. (new) The method of claim 48, wherein the aminopeptidase is immobilized on a solid support selected from the group consisting of chromatography resin, chromatography surface, or chromatography gel.
57. (new) The method of claim 48, wherein the polypeptide that is contacted with the aminopeptidase is recirculated such that the polypeptide is contacted with the aminopeptidase at least one additional time.
58. (new) The method of claim 50, wherein the alanyl group is cleaved from at least 48% of the protein molecules contacted with the aminopeptidase.

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59. (new) The method of claim 57, wherein the contacting occurs at a temperature from about 20 °C to about 40 °C.
60. (new) The method of claim 48, wherein a  $\text{Zn}^{2+}$  native catalytic cofactor of the aminopeptidase is replaced with a cation selected from the group consisting of  $\text{Cu}^{2+}$  and  $\text{Ni}^{2+}$ .
61. (new) A method for removing an alanyl residue from the N-terminal region of a polypeptide, the method comprising expressing a polypeptide having an alanyl residue in the N-terminal region of the polypeptide and contacting the expressed polypeptide with mobilized *Aeromonas proteolytica* aminopeptidase to cleave the alanyl residue from the polypeptide.
62. (new) The method of claim 61, wherein the alanyl residue is the N-terminal residue.
63. (new) The method of claim 61, wherein the polypeptide is a recombinant polypeptide.
64. (new) The method of claim 63, wherein the alanyl residue is non-native to the polypeptide.
65. (new) The method of claim 64, wherein the alanyl residue is cleaved to yield a polypeptide having a native amino acid sequence.
66. (new) The method of claim 65, wherein the polypeptide is expressed in an expression system selected from the group consisting of a mammalian, a bacterial, and an insect expression system.
67. (new) The method of claim 66, wherein the polypeptide is a human polypeptide.

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68. (new) The method of claim 66, wherein the polypeptide is selected from the group consisting of human growth hormone (HGH), bovine somatotropin (bST), porcine somatotropin, (pST), and human tissue factor pathway inhibitor (TFPI).

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Please cancel claims 1-3 and 5-21.